

# A Journey Into the Future



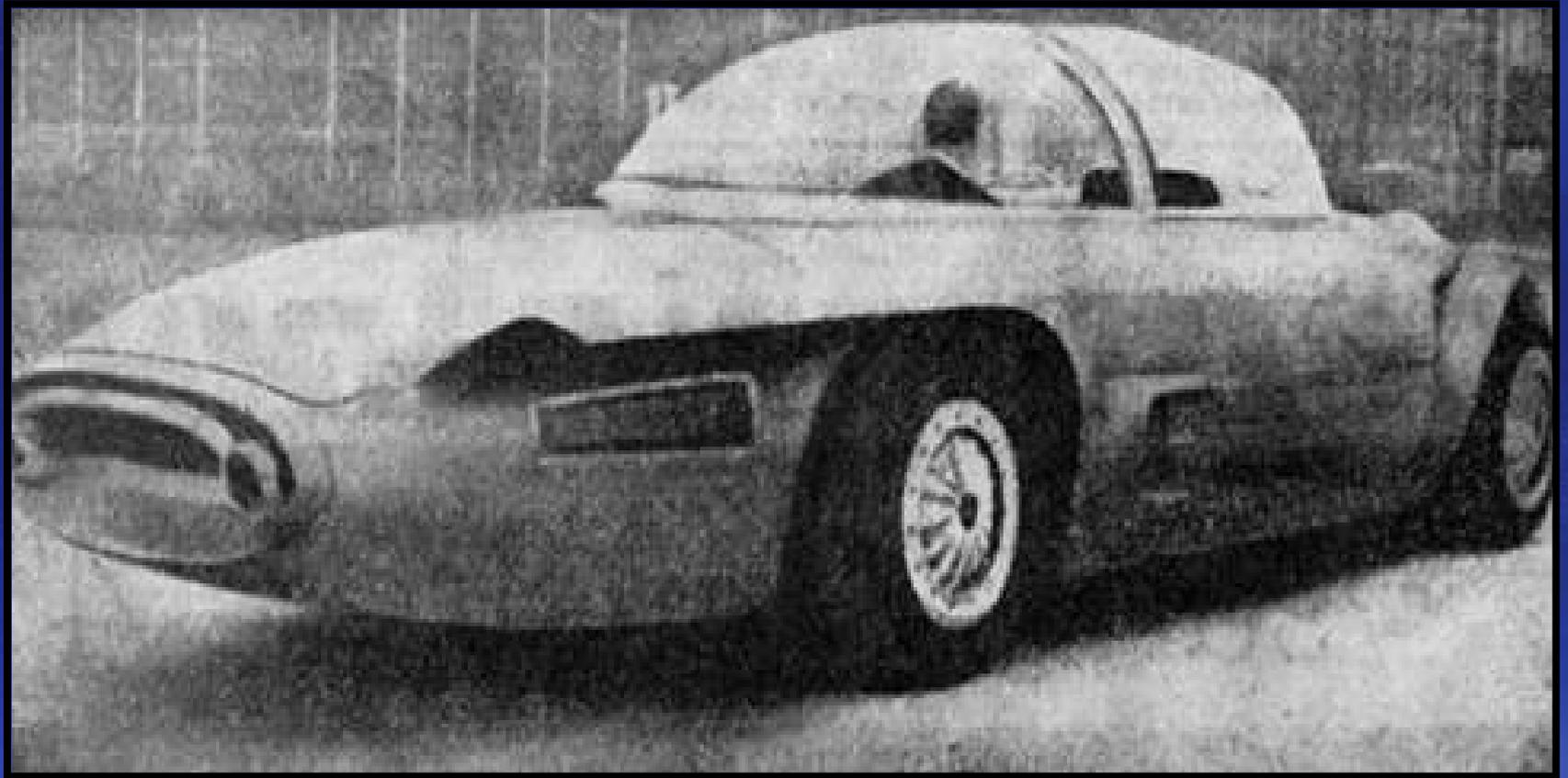
A 50 Year Vision for  
Surface Transportation



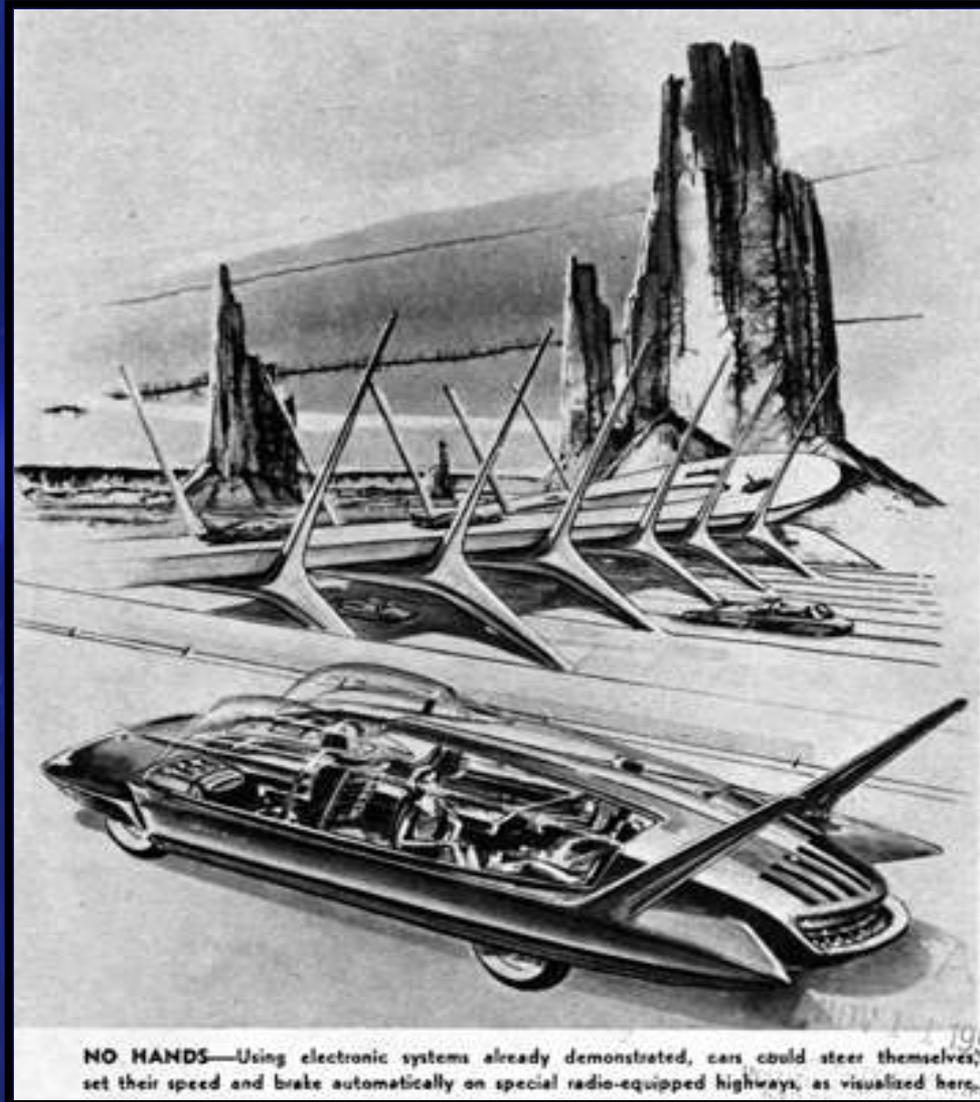
# A Journey into the Future

- A look back at 50 years of predictions
- What does the future look like?
  - Future Cars
  - Modern and Evolved Roadways
- How do we deliver the future?

# Transportation Future 50 years ago



# Transportation Future 50 years ago



# Transportation Future 50 years ago



# Transportation Future 50 years ago



**CURTISS-WRIGHT MODEL 2500 AIR CAR**

# Transportation Future 50 years ago



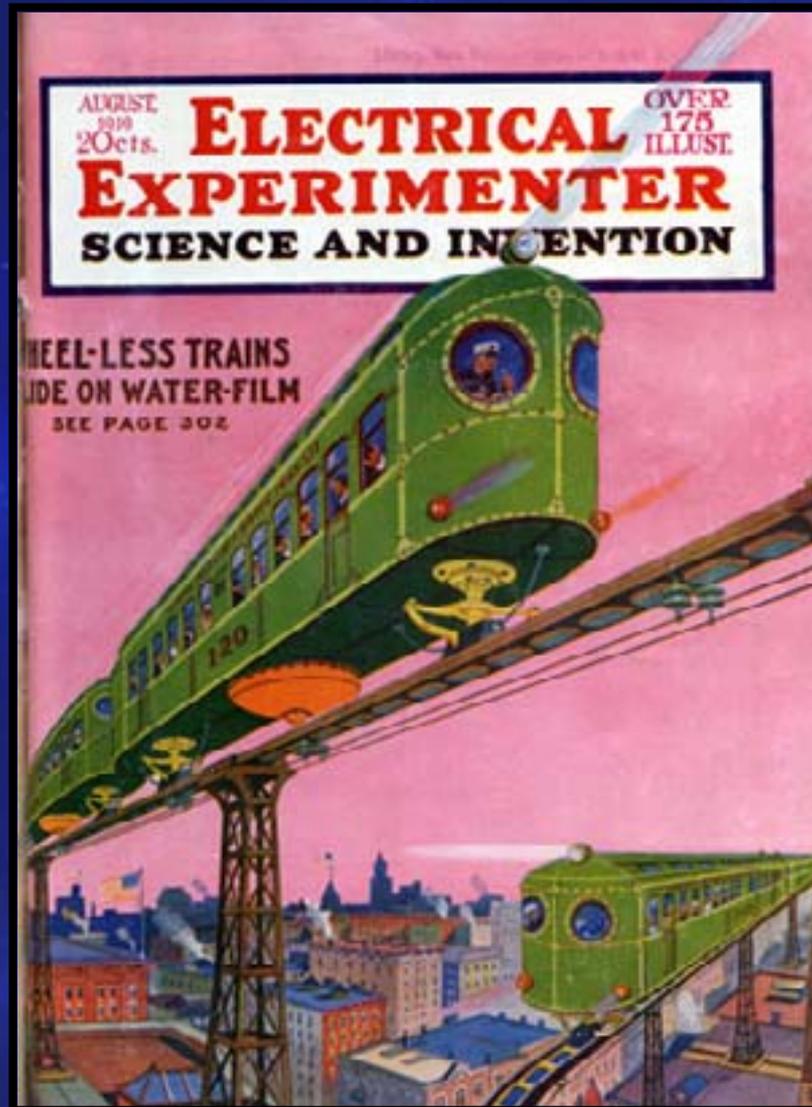
# Transportation Future 50 years ago



# Transportation Future 50 years ago



# Transportation Future 50 years ago





**So What Happened?**

**The Market Happened!**

# What about the future?

- Cars of the Future

- Fuel
- Technology
- Footprint

- Roadways and their Evolution

- Technology
- Financing
- Operations

# Cars of the Future



# Cars of the Future



# Cars of the Future



# Cars of the Future



# Cars of the Future



# Cars of the Future



# Cars of the Future



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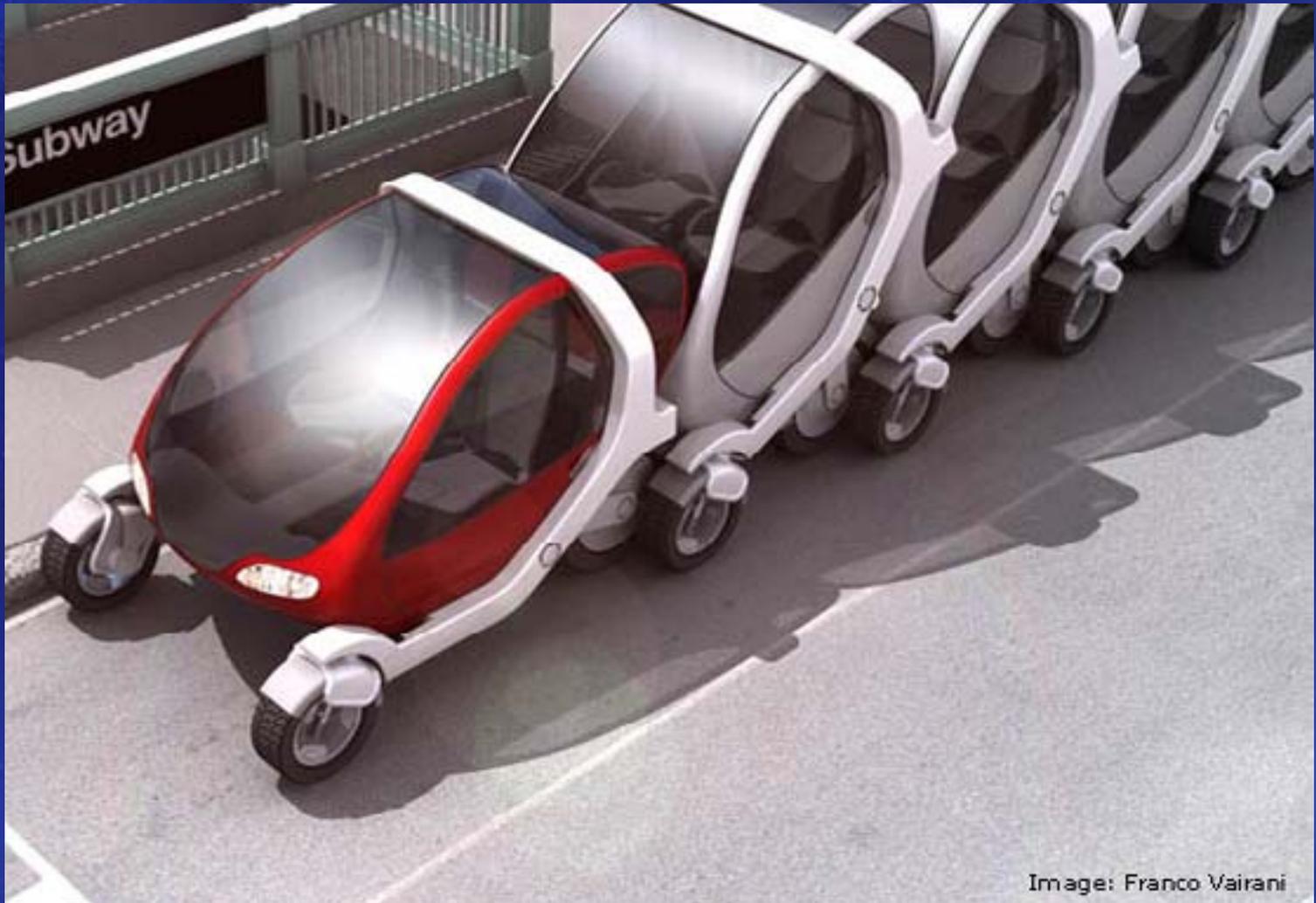


Image: Franco Vairani

# Cars of the Future



# What Will Our Cars Look Like?

- FUEL = Electric / Hydrogen / Hybrid / Other
- TECHNOLOGY = “Information Automatrix”
  - Adaptive Cruise Control
  - Lane Centering
- FOOTPRINT = Smaller / Specialized Cars

# Cars of the Future



# What Will Our Roads Look Like?

- What do our Customers look like?
  - Smaller, interconnected cars running on various fuels
- What do our Roads look like?
  - Lane widths that vary and have reversibility
  - Roads will communicate with the cars
    - Automated speed control
    - Heads-up Signage

# What will our Roadways look like?



# What will our Roadways look like?



# What will our Roadways look like?

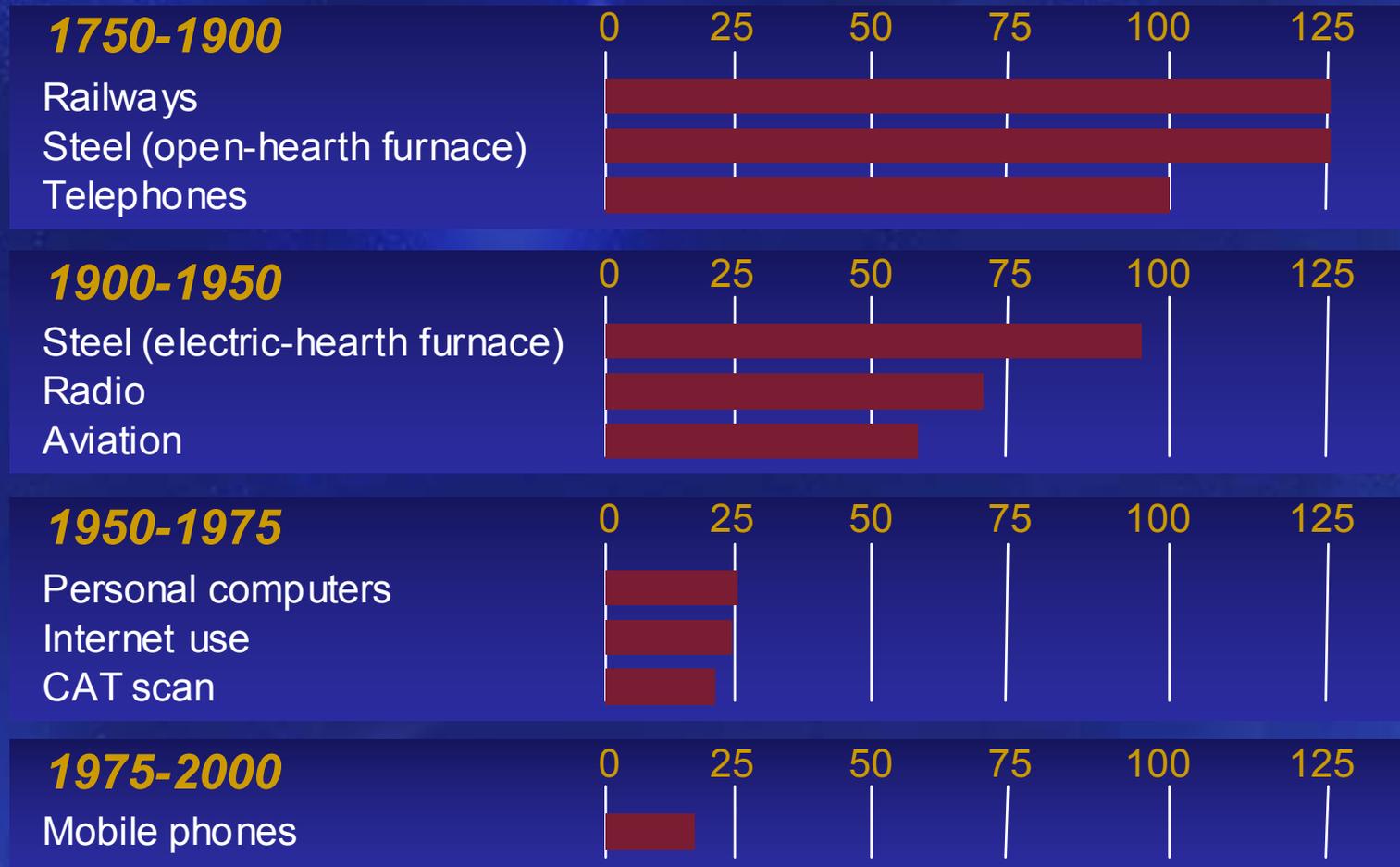


# What will our Roadways look like?



# High-Tech Leapfrog

Number of years after invention for selected technologies to reach 80% country coverage



# How Will we Finance Our Roads?

- What do our Customers look like?
  - Cars running on various fuels
- What do our Roads look like?
  - ALL ROADS ARE TOLL ROADS

# Why is this the future ?

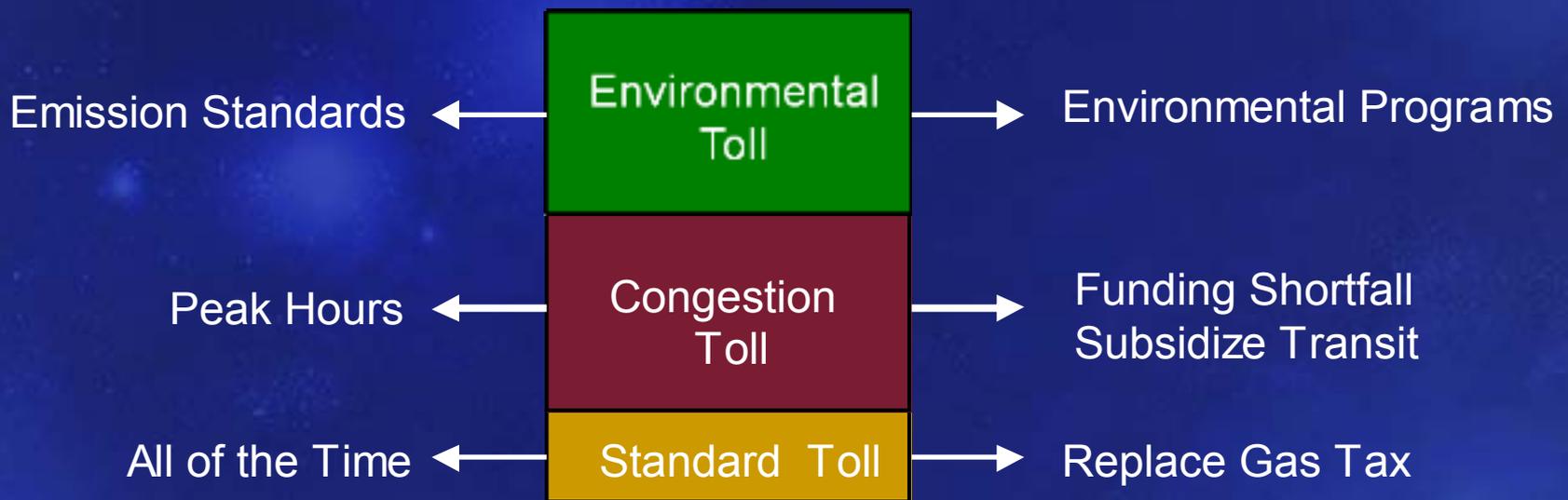
## **The Market Will Demand it!**

- Tolling technology allows for total pricing
- All roads are priced all of the time
- Squeeze capacity out of roads and cars

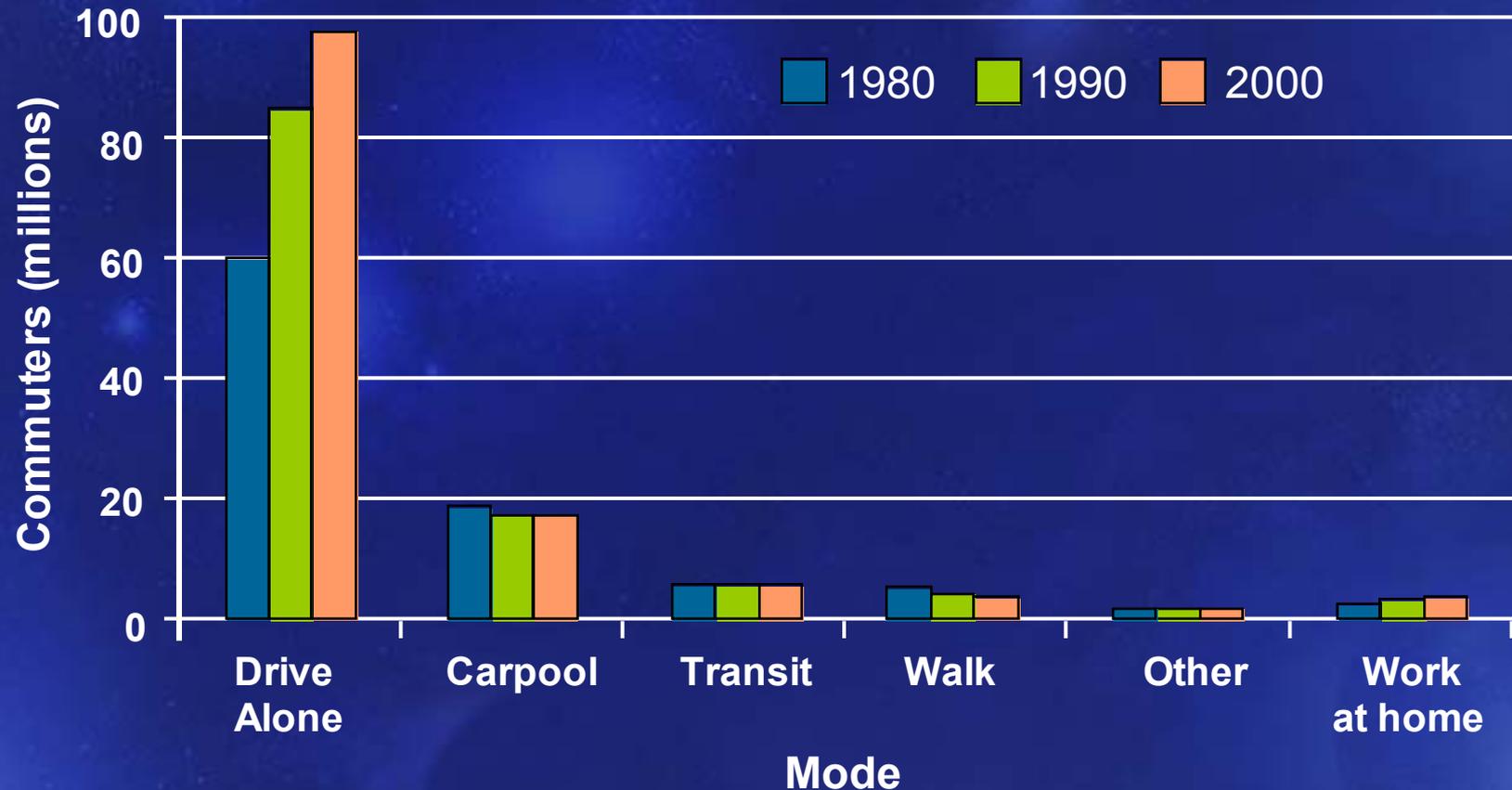
# 21<sup>st</sup> Century Revenue Model

## Charging

## Funding

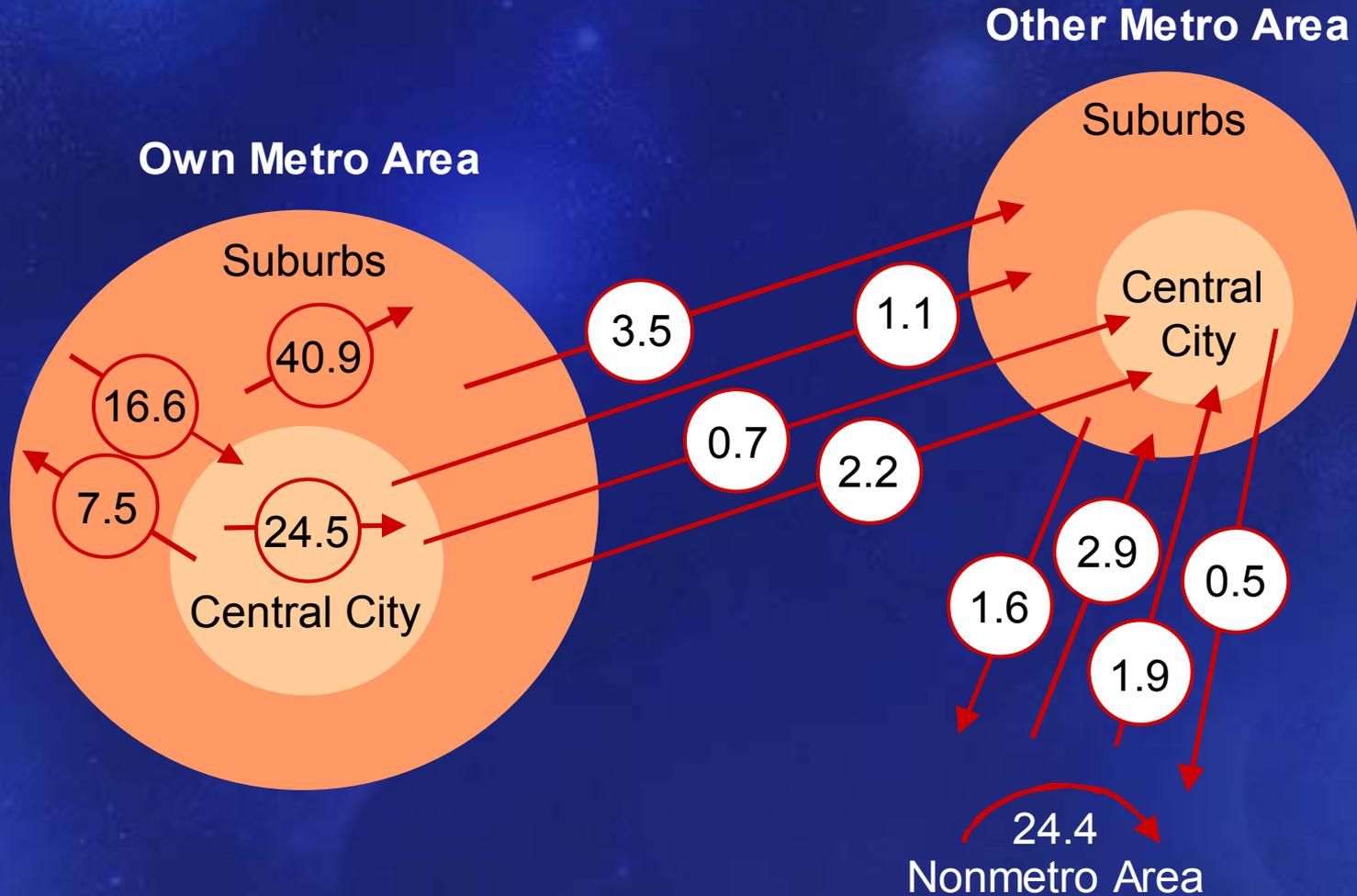


# Modal Trends Summary, 1980-2000\*



\*Commuting in America III: Alan E. Pisarski

# Metropolitan Flow Map (Millions of Commuters)\*



# Problems We Want To Solve

- Define a new revenue model for funding transportation
- Manage congestion on Roads



# Congestion Today

Level of Service

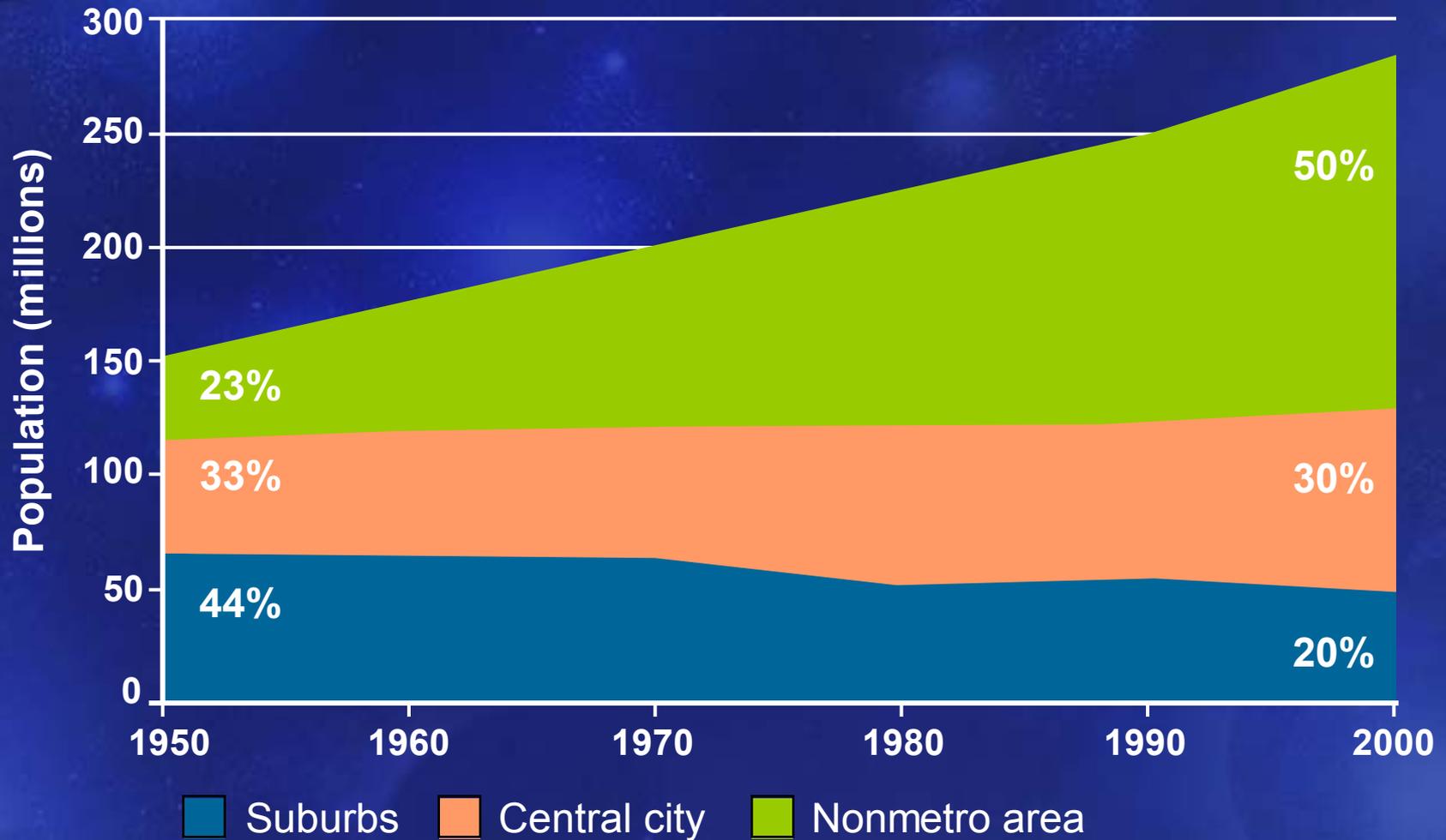


# Congestion Today

Level of Service



# Long-Term Population Trends by Major Geographic Groupings\*



\*Commuting in America III: Alan E. Pisarski

# Current Reality



# Future Reality

“The best way to predict  
the future is to invent it.”

-Alan Kay

# THE Future Reality?

## *Today*

Traditional widening  
New limited access  
Beginnings of Xpress lanes & variable pricing

## *25 Years*

Increased Xpress lanes & variable pricing  
Evolution to smarter roadways

## *50 Years*

Total capacity pricing  
Limited vehicles in urban core

# How do we deliver the Future?

- Acknowledge Reality
- Educate Stakeholders and Decision Makers
- Use Policy to Encourage the Market
- Prove the Business and Financial model
  - Interstate Express and HOT Lanes
  - Tolloed Lanes with Bus Rapid Transit
  - Congestion Pricing



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